BIBLIOGRAPHICAL NOTICES.

Elementary Course of Geology, Mineralogy, and Physical Geography. By Prof. D. T. Ansted, M.A., F R.S. &c. Second Edition. London, post 8vo, 1856, Van Voorst.

The former edition of Prof. Ansted's Elementary Course was noticed in this Journal, and has been favourably received as a text-book. The present edition is very much improved, and may almost be regarded as a new work; for although the general divisional character of the earlier volume is retained, yet the rearrangement of the essential parts, the abstraction of comparatively useless and the insertion of much new useful matter, of a practical kind, and the bringing of the various divisions of the subject into somewhat better proportion, have considerably enhanced the value of the present Manual.

Geology may be considered under two different heads—its theoretical aspects and practical bearing: the one inquiring into the character, position, and arrangement of the various materials composing the earth's crust; the other applying the knowledge thus acquired to the practical purposes and œconomical relations of life. Independently of the interesting history revealed to us by Geology of the mutations which the earth's surface has undergone, and the remarkable forms of animal and vegetable life which have successively tenanted it, and were adapted to the varying physical conditions, the practical importance of the science has been realized and acknowledged; for it is based upon numerous observed facts respecting the position and occurrence of the different materials—facts too distinct, and too nearly connected, to admit of any fear that the legitimate conclusions that have been drawn from them can ever be shaken.

Prof. Ansted's work differs from the ordinary treatises on Geology, and this difference, to some extent, is a useful feature. Experienced geologists may object, that the author has treated too summarily subjects which ought to be and are the object of special works, and that they are too much condensed for a learner. To some extent this may be an objection; having, however, found the previous edition adapted to a certain class of readers and students, Prof. Ansted has adhered to the same general plan of including the elements of all departments of geological science, as well as bringing within a narrow compass a multitude of facts important to be known, arranged in a convenient and systematic order; but the author is perfectly aware "that these qualities are obtained at the sacrifice of a certain amount of popularity, and he can hardly hope to render very attractive to the general reader the accumulation of material which it has been his chief object not to dissipate."

The four divisions under which the contents are arranged, include Physical Geography, Mineralogy, Descriptive and Practical Geology: the subject-matter is nearly equally divided, with the exception of the Descriptive portion, which exceeds by about sixty pages each of the others. The first six chapters comprise the mechanical con-

dition and properties of the substances met with near the earth's surface,—the forces of attraction and repulsion, light, heat, electricity, and chemical affinity,—the general distribution and changes in the condition of matter at the surface,—the various effects produced by atmospheric, aqueous, and organic agencies,—the reaction of the interior upon the external surface, as in volcanic and earthquake phænomena. The chapters on Mineralogy contain the form, structure, physical characteristics of minerals, and their classification; the arrangement, which has been modified, is upon the basic plan; and the list includes with synonyms 1400 names: the more important minerals, and those most useful in geological investigation, are more fully described in the text. In alluding to the use of the blowpipe, it would have been more useful if the author had given a concise account of the discrimination and reaction of the chief metallic substances. The Descriptive part comprises an account of the nature, mode of original aggregation, and subsequent changes of the different kinds of rock, their structure and mechanical displacement, and the classification of them by means of fossils. In citing the laws of distribution of fossils, Prof. Ansted has omitted the reference to Pictet, which was properly referred to in the first edition; for as some of the points are open to controversy, it is but right that the authority for them should be given. At p. 307 is a table of the numerical proportion of genera in the various rocks of the British Isles, compiled from the last edition of Morris's 'Catalogue of British Fossils.' The paucity of the fauna mentioned under Older Silurian may be accounted for by stating that under this term are included merely the Lingula flags and beds called 'Cambrian' by some authors,—the equivalents of the primordial zone of Barrande in Bohemia, and of the alum-slates of Sweden. The generic distribution of fossil plants is omitted from this table, and is here given as reduced from the same work:—

Sil.	Dev.	Carb.	Perm.	Trias.	Ool.	Cret.	O. Tert.	N. Tert.
4	3	61	7	4	53	8	20	8

The chapters on the classification and distribution of the palæozoic, secondary and tertiary rocks and their fossils, follow; the description of these proceeds in a regular order from the older to the modern groups, an arrangement which has many advantages over that which recedes in the reverse or downward order, as adopted in the former edition. We are glad, therefore, that Prof. Ansted has thought it advisable to alter his former plan; for surely it is better for the student to trace upwards the successive phases in the history of the globe, each of which has been partly dependent on the preceding, than to commence with the existing order and travel backwards. The growth by which the civilization of our own period has been produced, would be less understood by a written history commencing with the present dynasty.

The fourth and concluding part is devoted to Practical Geology, the matter being very much increased, improved, and more complete than in the former edition. The subjects treated of are:—agricultural geology, drainage, water supply, earthy minerals used

in construction,—also the quarrying, streaming and mining in stratified deposits, for gold, tin, coal, iron, salt, &c., the distribution and mineral statistics of the three last-named being given; and coal-mining and coal are fully treated, both here and in a preceding section. The last chapter describes mining operations for those valuable substances contained in cracks or fissures in various rocks, as metallic veins, and which require methods somewhat different to those that occur in stratified beds. This portion has been considerably enlarged; the geological conditions under which mineral veins occur, as well as the mode of working, are explained, additional illustrations of machinery and sections of veins being given. A useful glossary of scientific and technical words in mineralogy and geology is appended, including the explanation of numerous mining terms. Much information is usefully presented in a tabular form, and the 250 illustrations of sections and fossils are generally good. As before stated, the subject-matter is more varied than is usually found in elementary manuals, but it is concisely treated and methodically arranged, so as to form a text-book for the student and a useful practical guide for the miner, engineer, and traveller; for the author has "endeavoured not merely to describe facts and quote the observations of field-geologists, but also to teach principles, leaving it to the reader to apply those principles and digest the facts, working out thus a sufficient education in the subject;" and moreover, "if he understands the nature of the materials of which the earth's crust is made up, the order of their arrangement, and the changes undergone both in the rocks themselves and in the position they occupy, he will not be inclined to question either the value of such knowledge to practical men, or the nature of the applications of geology to practical purposes."

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

March 11, 1856.—Dr. Gray, F.R.S., in the Chair.

Observations on Strongylus filaria and Botaurus stellaris. By Edwards Crisp, M.D.

Dr. Crisp exhibited specimens and drawings of *Strongylus filaria*, which he discovered had lately proved so destructive to lambs in many parts of England. In several lambs examined by Dr. Crisp, millions of these entozoa and their ova were found in the bronchial tubes and in the intestinal canal, and he believed that many of the ova of these worms had been mistaken for *Cysticerci*; but the various stages of development could be readily traced under the microscope. Dr. Crisp had tried many experiments on the living worms as to the effect of poisons and other agents, and he believed that salt or sulphur given with the food, and the inhalation of sul-